

ABSTRACT

The present invention provides methods for detecting the presence or absence of a difference between two related nucleic acid sequences. In the methods, a target nucleic acid
5 and a reference nucleic acid are contacted under conditions in which they are capable of forming a four-way nucleic acid complex with a branch structure that is capable of migration. Under the contact conditions, if the reference nucleic acid and target nucleic acid are identical, branch migration is capable of going to completion resulting in complete strand exchange. If the reference nucleic acid and target nucleic acid are different, branch
10 migration does not go to completion, resulting in a stable four-way complex. Detection of the stable four-way complex identifies the presence of a difference between the nucleic acids. A stable four-way complex can be detected with molecules that specifically bind such complexes, by gel electrophoresis or by specific isolation of the stable four-way complex.